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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/741,297	12/19/2000	Genevieve Hansen	S-30025D	5673

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SYNGENTA BIOTECHNOLOGY, INC.

PATENT DEPARTMENT

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EXAMINER

HELMER, GEORGIA L

ART UNIT

PAPER NUMBER

1638

DATE MAILED: 09/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/741,297

Applicant(s)

HANSEN, GENEVIEVE

Examiner

Georgia L. Helmer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 42-48, 50-53 and 55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 42-48, 50-53 and 55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Office Action

1. The Office acknowledges receipt of Applicants Response; dated 30 June 2004. , Applicant has cancelled claims 49 and 54, and amended claims 42-44, 46, 50, 51 and 55. Claims 42-48, 50-53 and 55 are pending, and are examined in the instant action.
2. This action is made FINAL necessitated by Applicant's amendment.
3. All rejections not addressed below have been withdrawn.
4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Objections

5. The word "Gramineae" in claim 1, and throughout the claims, should be capitalized.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 42-46 and 51 rejected under 35 U.S.C. 102(b) as being anticipated by Enriquez-Obregon et. al. (Genetic transformation of sugarcane by Agrobacterium

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tumefaciens using antioxidant compounds, *Biotechnologia Aplicada* 1997, Vol. 14, pages 169-174).

Enriquez-Obregon et. al. teach a method of transforming sugarcane tissue, a Gramineae plant (p. 171, 1st column) with a nucleotide of sequence of interest (p. 170, Figure 1) comprising cocultivation of *Agrobacterium* with AgNO₃ with plant tissue (Tables 2 and 3, p. 171) and placing the tissue on selective medium comprising AgNO₃ (Table 2) to select a transformed plant cell or tissue comprising the nucleotide sequence of interest. Enriquez-Obregon et. al. also teach AgNO₃ concentrations of 2 mg/l and 5 mg/l (Table 2), precultivation of the tissue on medium containing AgNO₃ (Table 3)

Sugarcane is a member of the Gramineae family.

Accordingly, Enriquez-Obregon et. al. anticipate the claimed invention.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 42-48, 50-53 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Enriquez-Obregon et. al. (Genetic transformation of sugarcane by

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Agrobacterium tumefaciens) as discussed above from claims 42-46 and 51, in view of the state of the art.

Enriquez-Obregon et. al. not teach the use of a the use of embryogenic callus, embryos cells, or embryos tissue. The use of embryogenic callus, embryos cells, or embryos tissue are obvious variants and reflect design choices, which were well within the knowledge and skill of one of ordinary skill in the art and could be used with reasonable expectation of success. Thus the claimed invention would have been prima facie obvious as a whole to one of ordinary skill in the art at the time it was made.

Accordingly, the claimed invention is prima facie obvious.

9. Claims 42-44, 46-48 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Block, M, et al, Plant Physiol, 1989, vol 91, 694-701.

De Block teaches a method of transforming plant cell or tissue with a nucleotide of sequence of interest comprising cocultivation of *Agrobacterium* with AgNO₃ with plant tissue (Abstract; p 695, 1st paragraph and Table II) and placing the tissue on selective medium comprising AgNO₃ (2-10 mg/L) to select a transformed plant cell or tissue comprising the nucleotide sequence of interest. Since Applicant gives no time duration for the cocultivation condition, the duration can be infinitely large to infinitely small. Deblock also teaches the use of cocultivation of *Agrobacterium* with Ag₂S₂O₃ transform gramineous as well as AgNO₃ (p. 769, final ¶ and ¶ bridging 770).

Given the known economic value of gramineous plants such as maize and rice, and the value of enhanced genetic manipulation to improve transformation efficiencies

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for recalcitrant plants such as maize, one of ordinary skill in the art would have been motivated to transform gramineous plants, using the *Agrobacterium* transformation of DeBlock, to routinely transform gramineous plants, with a reasonable expectation of success. DeBlock discusses (p. 769, final ¶ and ¶ bridging 770) the dramatic effect of AgNO₃ and improvement of the transformability of the solanaceous plants with which he worked. DeBlock suggested that use of his protocol should be extended (p. 773, final ¶).

DeBlock does not teach the use of a *Gramineae* plant cell or tissue or the use of embryogenic callus, embryos cells, or embryos tissue. The use of embryogenic callus, embryos cells, or embryos tissue are obvious variants and reflect design choices, which were well within the knowledge and skill of one of ordinary skill in the art and could be used with reasonable expectation of success. Thus the claimed invention would have been prima facie obvious as a whole to one of ordinary skill in the art at the time it was made. Accordingly, the claimed invention is prima facie obvious in view of the prior art.

10. Claims 42-44, 46-48 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orlikowska, T., et al. (Influence of silver nitrate on regeneration and transformation of roses. *Journal of Applied Genetics*, (1996) Vol. 37App. 122-125. Meeting Information: International Conference on Perspectives, Warsaw, Poland , September 16-17, 1996), of record.

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Orlikowska teaches a method of transforming plant cell or tissue with a nucleotide of sequence of interest comprising cocultivation of *Agrobacterium* with AgNO₃ (10 mg/ml) with plant tissue (page 123, 3rd ¶)) and placing the tissue media comprising AgNO₃ (10 mg/L) to select a transformed plant cell or tissue comprising the nucleotide sequence of interest. Orlikowska transformed roses, a dicot plant.

Orlikowska does not teach the use of a *Gramineae* plant cell or tissue. Given the known economic value of gramineous plants such as maize and rice, and the value of enhanced genetic manipulation to improve transformation efficiencies for recalcitrant plants such as maize, one of ordinary skill in the art would have been motivated to transform gramineous plants, using the *Agrobacterium* transformation teach the use of a *Gramineae* plant cell or tissue. Given the known economic value of gramineous plants such as maize and rice, and the value of enhanced genetic manipulation to improve transformation efficiencies for recalcitrant plants such as maize, one of ordinary skill in the art would have been motivated to transform gramineous plants, using the *Agrobacterium* transformation of Orlikowska, to routinely transform gramineous plants, with a reasonable expectation of success.

Orlikowska does not teach the use of a *Gramineae* plant cell or tissue or the use of embryogenic callus, embryos cells, or embryos tissue. The use of embryogenic callus, embryos cells, or embryos tissue are obvious variants and reflect design choices, which were well within the knowledge and skill of one of ordinary skill in the art and could be used with reasonable expectation of success. Thus the claimed invention

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would have been prima facie obvious as a whole to one of ordinary skill in the art at the time it was made.

Accordingly, the claimed invention is prima facie obvious.

Claim Rejections - 35 USC § 103

Double Patenting

11. The nonstatutory double patenting rejection is maintained. Fulfillment of requirements to overcome this rejection will be held in abeyance until allowable subject matter is indicated, per Applicant's request.

Remarks

12. Claims 42-44, 46-48, 50-53 and 55 are rejected given the prior art of record.

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

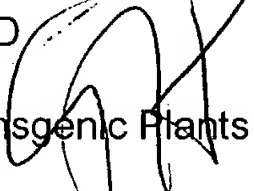
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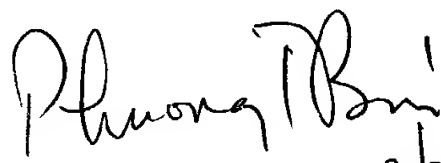
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Georgia L. Helmer whose telephone number is 571-272-0796. The examiner can normally be reached on 8:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson can be reached on 571-272-0804. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Georgia Helmer PhD
Patent Examiner
Art Unit 1638 – Transgenic Plants
15 September 2004




PHUONG T. BUI
PRIMARY EXAMINER
9/20/04